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Abstract

Management of the Atmosphere Resource Recovery and Environmental Monitoring Project

The Advanced Exploration Systems Program's Atmosphere Resource Recovery and Environmental Monitoring (ARREM) project is working to further optimize atmosphere revitalization and environmental monitoring system architectures. This paper discusses project management strategies that tap into skill sets across multiple engineering disciplines, projects, field centers, and industry to achieve the project success. It is the project's objective to contribute to system advances that will enable sustained exploration missions beyond Lower Earth Orbit (LEO) and improve affordability by focusing on the primary goals of achieving high reliability, improving efficiency, and reducing dependence on ground-based logistics resupply. Technology demonstrations are achieved by infusing new technologies and concepts with existing developmental hardware and operating in a controlled environment simulating various crewed habitat scenarios. The ARREM project's strengths include access to a vast array of existing developmental hardware that perform all the vital atmosphere revitalization functions, exceptional test facilities to fully evaluate system performance, and a well-coordinated partnering effort among the NASA field centers and industry partners to provide the innovative expertise necessary to succeed.